

# **Nucleotide Second Messenger Signaling in Bacteria**

SPP 1879 Kick-off Meeting

16-17 September, 2016, Harnack-Haus, Berlin-Dahlem, Germany

Organizers:

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The organizers gratefully acknowledge the support of the meeting by the  
Deutsche Forschungsgemeinschaft (DFG)

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## Conference location

Harnack-Haus - Tagungsstätte der Max-Planck-Gesellschaft

Inhnestr. 16-20, 14195 Berlin, Germany

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## **Scientific Programme**



# Nucleotide Second Messenger Signaling in Bacteria

SPP 1879 Kick-off Meeting

## Friday Morning (September 16<sup>th</sup> 9:00 – 13:00)

08:30 – 09:00 Registration / Poster set-up / Get together

09:00 – 09:10 Regine Hengge: Welcome and Introduction

### Session 1. ppGpp

Discussion Leader: **Susanne Häussler** (Helmholtz Centre for Infection Research, Braunschweig)

09:10 – 09:35 **Daniel Wilson** (LMU München):  
The stringent factor RelA adopts an open conformation on the ribosome to stimulate ppGpp synthesis

09:35 – 10:00 **Franz Narberhaus** (Ruhr-Universität Bochum):  
The role of (p)ppGpp in conditional proteolysis in *Escherichia coli*

10:00 – 10:25 **Kürşad Turgay** (Leibniz Universität Hannover):  
Curbing protein synthesis is important for the concerted heat shock response of *Bacillus subtilis*

10:25 – 10:50 **Gert Bange** (Philipps-Universität Marburg):  
Towards a complete biochemical and structural understanding of the alarmone metabolism of *Bacillus subtilis*

11:00 – 11:30 Coffee Break

### Session 2. Molecules & methods

Discussion Leader: **Gert Bange** (Philipps-Universität Marburg)

11:30 – 11:55 **Harald Schwalbe** (Goethe-Universität Frankfurt):  
NMR-spectroscopic investigation of the conformational

12:20 – 12:45 **Volkhard Kaefer** (Medizinische Hochschule Hannover):  
Appropriate sample preparation is indispensable for accurate quantitation of bacterial signaling molecules by mass spectrometry

### Session 3. cAMP & cGMP

Discussion Leader: **Gert Bange** (Philipps-Universität Marburg)

12:20 – 12:45 **Elizaveta Krol** (Philipps-Universität-Marburg):  
Cyclic mononucleotide signaling in the symbiotic alpha-proteobacterium *Sinorhizobium meliloti*

13:00 – 14:00 Lunch

14:00 – 16:00 Poster Session

15:30 – 16:00 Coffee

### **Session 3. cAMP & cGMP (continued)**

Discussion Leader: **Franz Narberhaus** (Ruhr-Universität Bochum)

16:30 – 16:55 **Victor Sourjik** (Max Planck Institute for Terrestrial Microbiology, Marburg):  
Intracellular potassium controls CRP response in *Escherichia coli*

### **Session 4. c-di-AMP**

Discussion Leader: **Franz Narberhaus** (Ruhr-Universität Bochum)

16:55 – 17:20 **Jörg Stülke** (Georg-August-Universität Göttingen):  
Cyclic-di-AMP: an essential second messenger that reports potassium availability and controls potassium homeostasis in *Bacillus subtilis*

17:20 – 17:45 **Fabian Commichau** (Georg-August-Universität Göttingen):  
Role of the essential signalling molecule cyclic di-AMP in maintaining the protective cell envelope in *Listeria monocytogenes*

17:45 – 18:10 **Gerd Seibold** (Universität Ulm):  
The second messenger c-di-AMP controls potassium uptake in *Corynebacterium glutamicum* by binding to the channel CgIK

18:10 – 18:35 **Natalia Tschowri** (Humboldt-Universität zu Berlin):  
Cyclic dinucleotide signalling in *Streptomyces* differentiation and stress survival

19:00 Dinner / Get together



## Saturday Morning (September 17<sup>th</sup> 9:00 – 13:00)

### Session 5. c-di-GMP

Discussion Leader: **Jörg Stülke** (Georg-August-Universität Göttingen)

- 09:00 – 09:25 **Urs Jenal** (Biocentre Basel):  
Surface-mediated activation of *Pseudomonas aeruginosa* type IV pili through a novel c-di-GMP effector protein
- 09:25 – 09:50 **Nicole Frankenberg-Dinkel** (Universität Kaiserslautern):  
Mechanism of NO-induced biofilm dispersal in *Pseudomonas aeruginosa*
- 09:50 – 10:15 **Susanne Häussler** (Helmholtz Centre for Infection Research, Braunschweig):  
Transcriptional profiling of c-di-GMP signalling in *Pseudomonas aeruginosa*
- 10:15 – 10:40 **Sandra Schwarz** (Universität Tübingen):  
Oxygen-dependent regulation of a diguanylate cyclase lacking canonical sensory and regulatory domains in *Pseudomonas aeruginosa*
- 10:45 – 11:15 Coffee break

Discussion Leader: **Urs Jenal** (Biocentre Basel)

- 11:15 – 11:40 **Regine Hengge** (Humboldt-Universität zu Berlin):  
Local c-di-GMP signaling in the control of cellulose biosynthesis in *Escherichia coli*
- 11:40 – 12:05 **Kai Thormann** (Justus-Liebig-Universität Gießen):  
Role of the phosphodiesterase PdeB in localized c-di-GMP regulation
- 12:05 – 12:30 **Dorota Skotnicka** (Max Planck Institute for Terrestrial Microbiology, Marburg):  
Regulation of development in *Myxococcus xanthus* by the second messenger c-di-GMP
- 12:30 – 12:55 **Annegret Wilde** (Albert-Ludwigs- Universität Freiburg):  
A light-triggered behavioural switch in cyanobacterial motility
- 12:55 – 13:00 Farewell and end of the Meeting



